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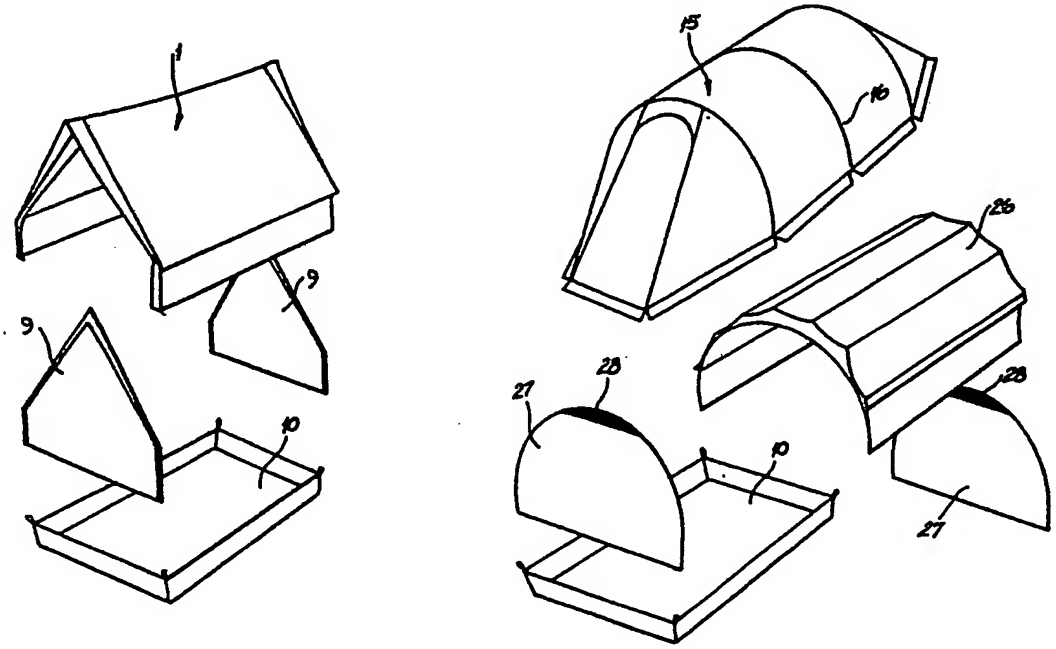

(57) Abstract

A tent kit for providing an A-tent for summer use and a double walled tunnel tent for winter use, the kit including a roofing sheet (1) which forms the canopy of the A-tent or the inner wall of the tunnel tent, a fly sheet (15) forming the outer wall of the tunnel tent, hoops (17) for supporting the tunnel tent, and two pairs of end closures (9)(27) for closing the ends of the A and the tunnel tents respectively.

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TENT

This invention relates to a tent kit able to provide a double-walled tunnel tent for winter use and an A-tent for summer use, both tents being relatively light so that they can be carried by a hiker.

An A-tent has a generally triangular shape when viewed from either end and may be formed from a rectangular sheet of light material supported by two poles at respective ends of the tent. The poles are held upright by guys. The sides of the tent diverge downwardly and are held apart by further lines and tent pegs. The A-tent is ideal for summer use in that it is light to carry, easy to erect, and cool. However it is not suitable for winter use as it offers a relatively high obstruction to a cross wind. It is also restricted for space, providing only a sleeping area and its many tether points make it difficult to erect in snow conditions.

The tunnel tent has been developed for use by hikers in winter conditions as it does not suffer from the A-tent's disadvantages. It is provided with an external hoop skeleton which enables it to withstand lateral loading caused by high winds and snow. It also has a double wall with a cavity between the walls so that a pocket of air insulation is trapped between the walls. This makes the tent warmer and relatively condensation free. Also the external skeleton commonly provides ground anchoring which, together with the tunnel shape, greatly reduces the risk of the tent being blown away in high winds. It is, however, unnecessarily heavy for summer use and too hot.

A hiker wishing to camp overnight in summer and winter must therefore equip himself with two tents of different types. This is relatively expensive.

An object of this invention is to provide a tent kit able to provide a lightweight A-tent for summer use and a tunnel tent for winter use, some of the parts of the kit being used in both tents so that the overall cost for the hiker wishing to camp out in summer and winter is reduced.

In accordance with the present invention a tent kit providing an A-tent for summer use and a double walled tunnel tent for winter use, includes a tent kit for providing an A-tent for summer use and a double walled tunnel tent for winter use, the kit including: a roofing sheet which provides the canopy of the A-tent and the inner wall of the tunnel tent; lines of spaced anchorages extending parallel to each other, with one pair at opposite ends of the sheet which provide respective ends of the tent: a set of rods providing hoops for externally supporting the tunnel tent: connections for attaching the two walls of the tent to the hoops and which include disconnectable ties extending between the two walls to respective anchorages on the inner wall of the tunnel tent: a fly sheet held by the hoops in spaced parallel relationship outside the inner wall to provide the outer wall of the tunnel tent; a first pair of tent end-closures of A-shape to be fitted to the ends of the A-tent; a second pair of end-closures shaped to match the ends of the tunnel tent; and disconnectable strip connectors extending along complementary edges of the end-closures and the ends of the tent to enable the ends of the tent to be closed irrespective of its configuration for summer or winter use.

Preferably the tent is provided at its ends with vestibules usable for storage and for cooking. These may be provided by suitably shaping either the end closures of the tent or opposite ends of the fly sheet.

When the tent is to be converted into a tunnel tent, the resiliently flexible rods may be threaded through respective tubes formed in the material of the fly sheet and then flexed

into a hoop shape with opposite end portions of each hoop preferably passing through openings in tabs projecting laterally away from the sides of the tent at ground level.

The anchorages on the waterproof sheet may be formed as loops and these conveniently have toggles threaded through them which may be attached to the inside surface of the fly sheet or through openings in the fly sheet so that they can make connections directly with the hoops.

The invention will now be described in more detail, by way of example, with reference to the accompanying drawings, in which:-

FIGURE 1 shows an A-tent partly assembled from a tent kit;

FIGURE 2 shows a tunnel tent assembled from the same kit;

FIGURE 3 is a perspective and partly broken away view of a tunnel tent showing internal details;

FIGURE 4 is an exploded view of the two tents made up from the kit but excludes details such as guys, tent poles hoops and ground pegs used to erect the tents.

FIGURE 5 shows an adjustable tent cleat made from a tube; and

FIGURE 6 shows the tent cleat figure 5 being adjusted.

Figure 1 shows a conventional A-tent. It comprises a rectangular sheet of waterproof air permiable material which is able to breathe. Such a material may be provided by a 65 gsm layer of material known under the trade mark GORETEX provided with an inner lining of a material known under the trade mark as NEXUS. This material is available in Australia.

The sheet provides a tent canopy 1 for the A-tent and is held in shape by two tent poles 2 and guys 3. These are connected at their upper ends at the sides of the tent to respective anchorages 4 which are arranged in lines 5 extending parallel to the ends 6 of the tent. Each anchorage is provided by a loop. The lower ends of the guys 3 are attached to the ground by pegs 7 and adjustable cleats.

The open ends of the tent are bordered by zipper connectors 8 to which are attached respective end-closures 9 of generally triangular shape. One of these is shown in place. The other is shown lying on the ground prior to it being fitted to the tent. Two edges of each end-closure 9 are provided with complementary zipper connections enabling them to be attached to and detached from the ends 6 of the tent.

The tent is provided with a detachable floor sheet 10 having a raised border which may be capable of being attached, for example by further means (not shown), to the inside walls of the tent. As shown in figure 4, the upper portion of each end-closure 9 is provided with a meshed zone 11 providing ventilation. The zipper connections between the end 6 of the tent and the end-closures may terminate at the meshed zone and be replaced by a detachable rip fastener such as that known under the registered trade mark VELCRO.

Figures 2 and 3 show a tunnel tent erected from the kit. It comprises a snow fly sheet 15 made from 75 gsm P.U. proofed nylon or polyester fabric which is both light and strong. It is formed with spaced fabric tubes 16 through which are threaded light tubular hoops 17. These may each be formed from interfitting tubular sections which are flexed into a hoop configuration when fitted together to provide an external skeleton frame for the tent. The ends of the hoops are pointed, allowing them to be thrust into the ground to provide, coupled with the restraining effect of tent pegs and occupants, a strong resistance to lateral thrust on the tent canopy.

In the embodiment shown in figure 2 the fly sheet 15 extends beyond the tent section encircled by the hoops 17 to provide vestibules 18 at opposite ends of the tent. The front vestibule is provided with two lateral door flaps 19 which are shown rolled-up in figure 2 but which may be held closed by zippers. The lower marginal edges of the fly sheet provide anchorage strips 20 around the tent which are held by tent pegs 21. Each vestibule may be additionally provided with a floor sheet (not shown) held in place by having its marginal edges overlayed by the anchorage strips 20 of the fly sheet.

The internal construction of the tent in its tunnel mode is apparent from figures 3 and 4. Its inside wall is provided by the rectangular sheet which provided by canopy 1 of the A-tent. This sheet is held in a tunnel shape by tie connectors 24. These are provided by thongs 25 connected to the inside of the fly sheet at the positions of the hoops 17 and opposite the positions of the anchorages 4 (see figure 1). Toggles 26 are attached to the ends of the thongs which are preferably elastic. The toggles are passed through respective anchorage loops on the GORETEX sheet so that it is held in the tunnel shape 26 shown in figure 4. An air gap of about 8 centimetres is then left between the inner and outer wall of the tent to provide insulation.

Each end of the tent is closed by an end-closure of the shape shown at 27 in figure 4. The end closure has a mesh section 28 formed in its upper zone for ventilation purposes, and zipper connections (not shown) are provided along its arcuate portions for attaching it to the ends of the tent.

The same floor for the tent is used irrespective of whether it is erected as an A-tent or a tunnel tent. It is provided with apertured tabs (not shown) which can be attached to pegs securing the tent and floor to the ground.

The tents described above can be modified in various ways. Forexample, the end-closures can be made with a detachable mesh insect screen lining enabling the closure itself to be folded back leaving the mesh screen zippered in place. Tie ribbons can be arranged at the ends of the tent to enable the end-closures to be tied back when not required.

An alternative form of tie end-connector may comprise a tie rod having the toggle at tis outer end and which can be passed through an opening in the hoop tube and screwed into the hoop. The hoop is provided for this purpose with a threaded opening which appears in a respective opening when the hoop is correctly centered in the tube of the fly sheet. Further loop anchorages may also be provided on the inside of the inner wall at the positions of the outside anchorage loops 4 and further toggle rods may be looped through them and secured to floor batons extending across the floor of the tent beneath the floor sheet. Such securing may be effected by screwing the rods into the batons at positions located close to the sides of the tent.

Preferably the guys are provided with adjustable cleats of tubular form. Such a cleat is shown in figures 5 and 6. A tube 80 is provided with a diametric hole 81 in the central portion of its length and is made from a hard material such as plastics. The "standing" end of a rope guy 3 is passed through the hole 81 in which it is a close fit, and looped around a tent peg. The free end of the guy 3 is then threaded back through the interior of the tube 80 and knotted, as shown at 82. When the guy 3 is under tension, the knot 82 bears on the diametrically extending portion of the guy 3 and jams it against the sides ofthe holes in the tube through which it passes. The parts are then as shown in figure 5. To adjust the guy 3, the tube 80 is gripped in the hand and turned so that the hole 81 is aligned with the standing portion of the guy 3. This jams the free end of the guy against the end of the tube, as shown in figure 6, while allowing the standing portion of the guy 3 to slip through the hole 81.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A tent kit for providing an A-tent for summer use and a double walled tunnel tent for winter use, the kit including: a roofing sheet which provides the canopy of the A-tent and the inner wall of the tunnel tent; lines of spaced anchorages extending parallel to one pair of opposite ends of the sheet which provide respective ends of the tent; a set of rods providing hoops for externally supporting the tunnel tent; connections for attaching the two walls of the tent to the hoops and which include disconnectable ties extending between the two walls to respective anchorages on the inner wall of the tunnel tent; a fly sheet held by the hoops in spaced parallel relationship outside the inner wall to provide the outer wall of the tunnel tent; a first pair of tent end-closures of A-shape to be fitted to the ends of the A-tent; a second pair of end-closures shaped to match the ends of the tunnel tent; and disconnectable strip connectors extending along complementary edges of the end-closures and the ends of the tent to enable the ends of the tent to be closed irrespective of its configuration for summer or winter use.

2. A tent kit as claimed in claim 1, in which said roofing sheet is of waterproof and air-passable material capable of breathing.

3. A tent kit as claimed in claim 1, in which the fly sheet is shaped to provide vestibules at opposite ends of the tent.

4. A tent kit as claimed in claim 1, in which vestibules are provided by respective end-closures at opposite ends of the tent.

5. A tent kit as claimed in any one of the preceding claims, in which cloth tubes formed in the fly sheet accommodate the hoops, and disconnectable toggles pass through respective loops provided by the anchorages on the inner wall of the tunnel tent and are connected to respective ties attached to the inside

surface of the fly sheet.

6. A tent kit as claimed in claim 5, in which further ties extend inwardly and downwardly from the anchorages to fixtures provided adjacent the sides of the tent in ground straps extending beneath and across the tent.

7. A tent kit as claimed in any one of the preceding claims, in which the waterproof sheet is rectangular and has fastenings for zippers extending along one pair of parallel sides, and holes for ground pegs extending along its other pair of parallel sides.

8. A tent kit as claimed in any one of the preceding claims, in which the waterproof and air permiable sheet comprises a layer of material known under the registered trade mark GORETEX lined with a material known under the trade mark NEXUS.

9. A tent kit as claimed in any one of the preceding claims, in which the hoops are made of resiliently deformable rod-sections which fit together to provide the hoops.

10. A tent kit as claimed in any one of the preceding claims, including adjustable guy cleats each formed as a straight tube having intermediate its ends a diametric hole extending through both walls and whose diameter approximates to that of the guy it is to be used with, which the tube bore diameter is approximately twice that of the guy.

11. A tent kit substantially as claimed with reference to the accompanying drawings.

FIG. 1

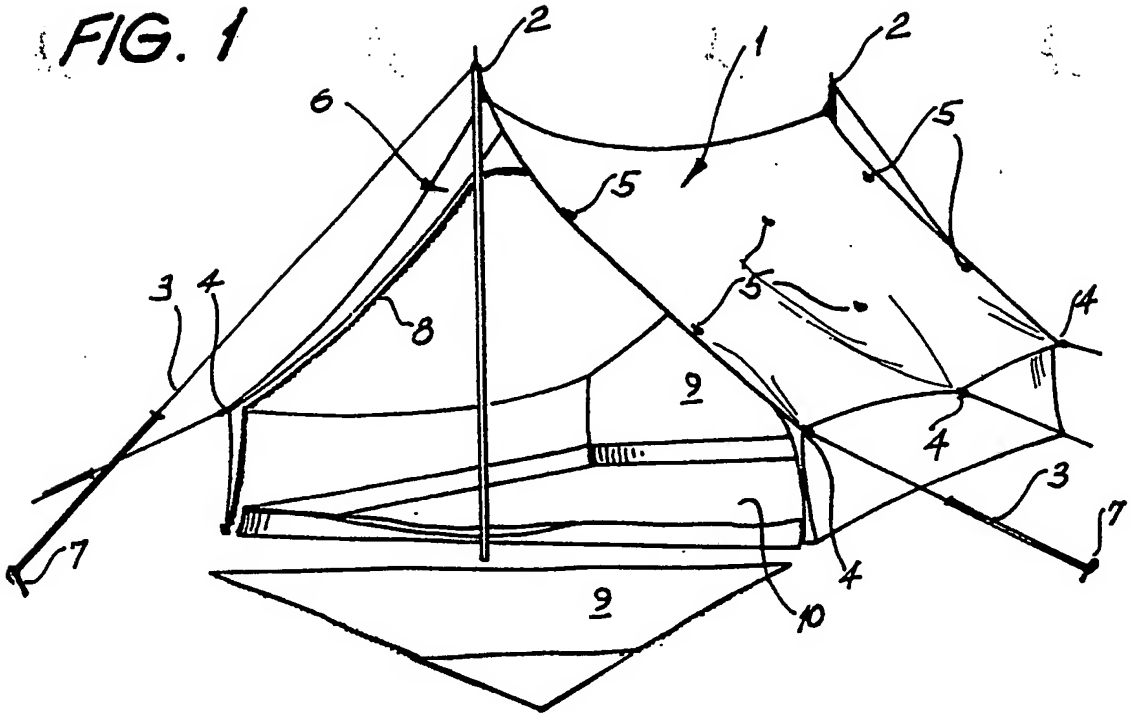
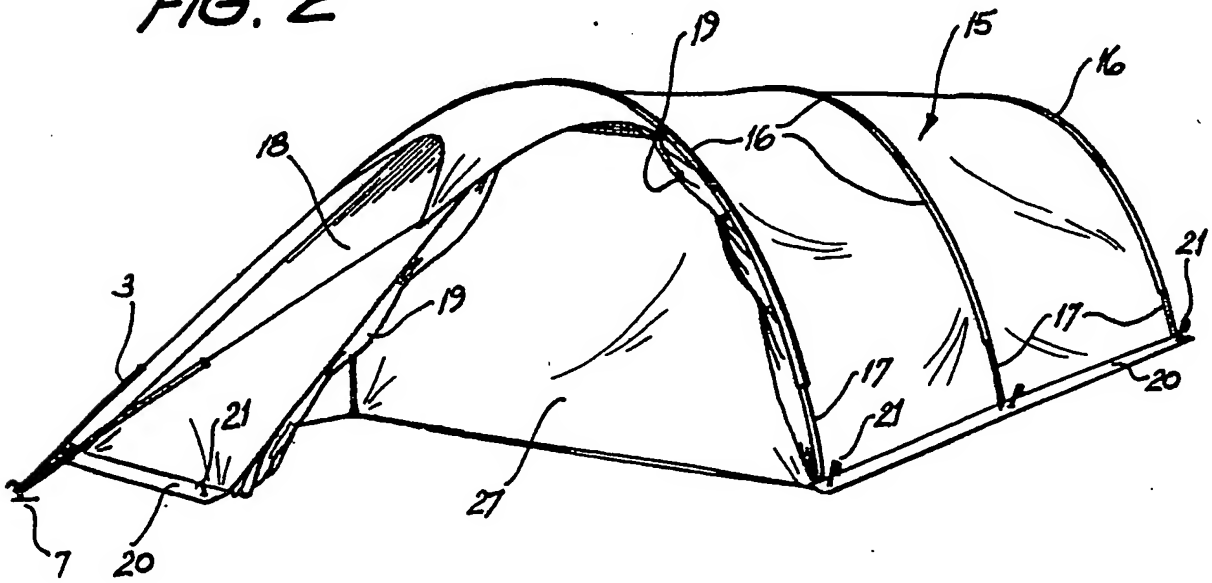


FIG. 2



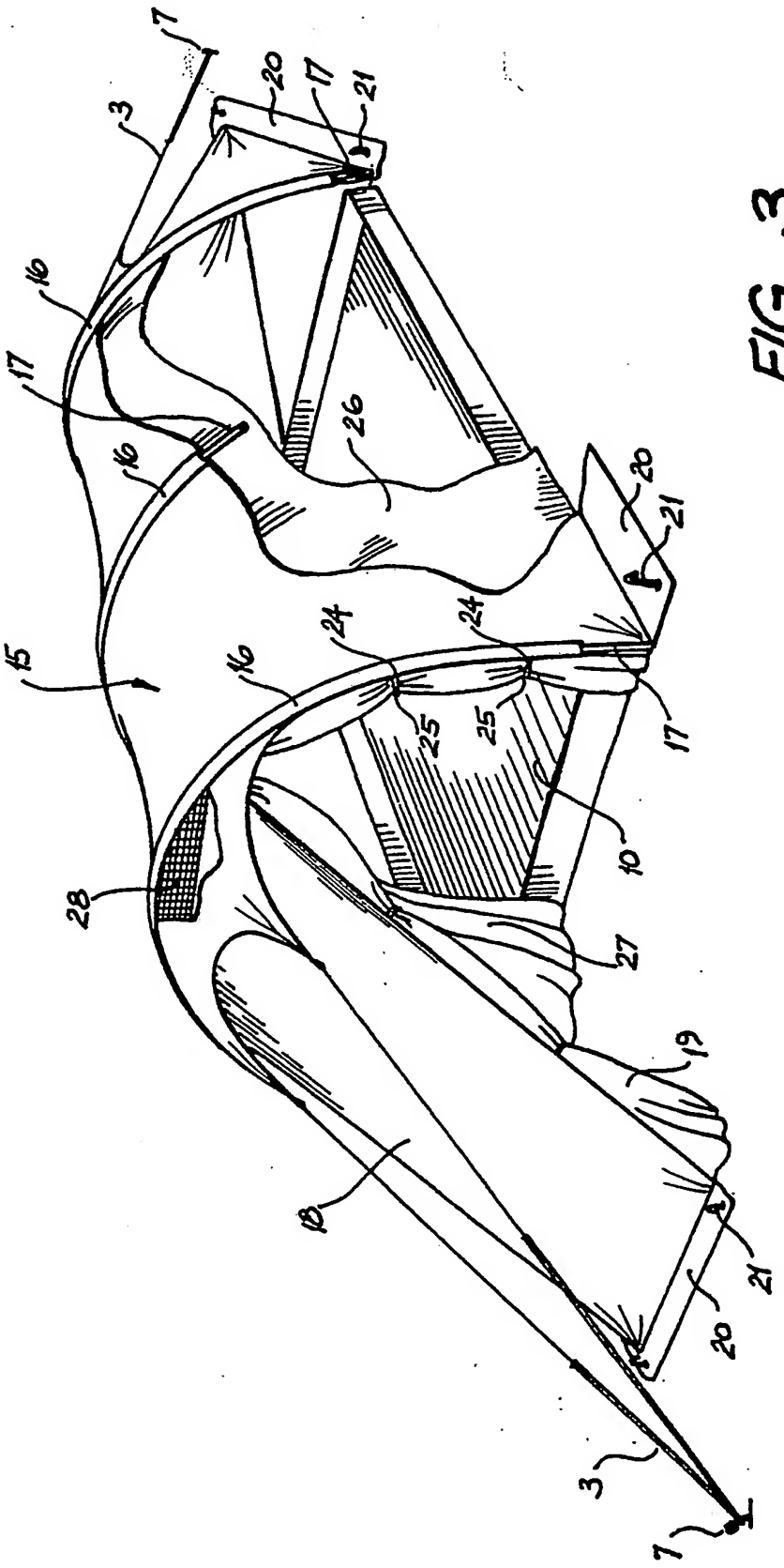


FIG. 3

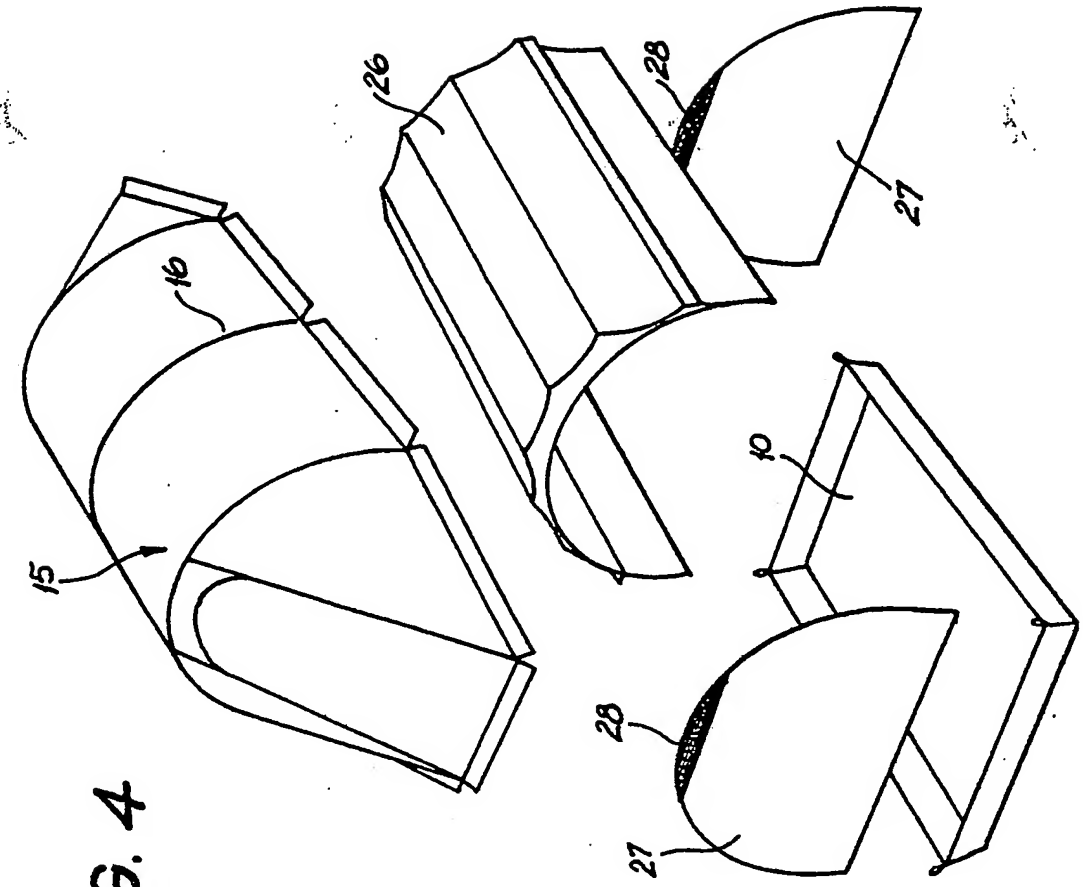


FIG. 4

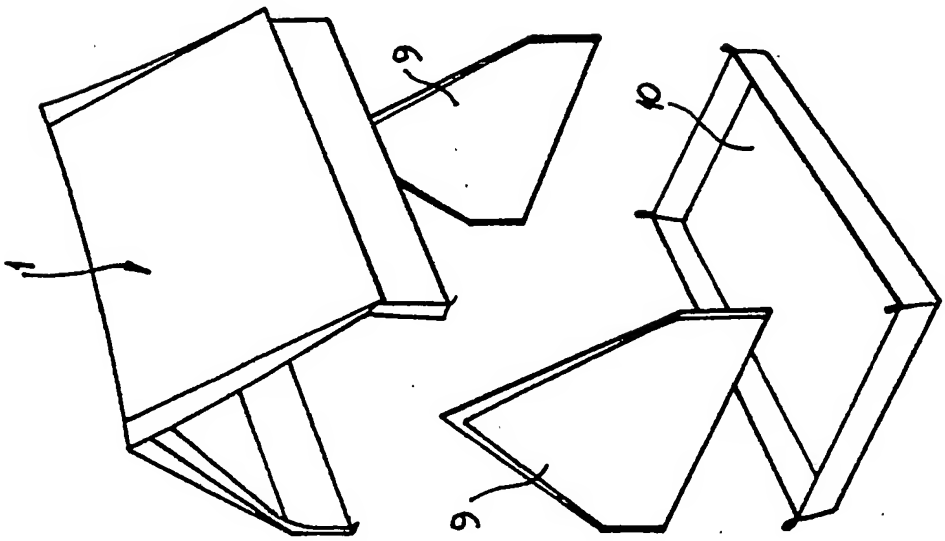


FIG. 5

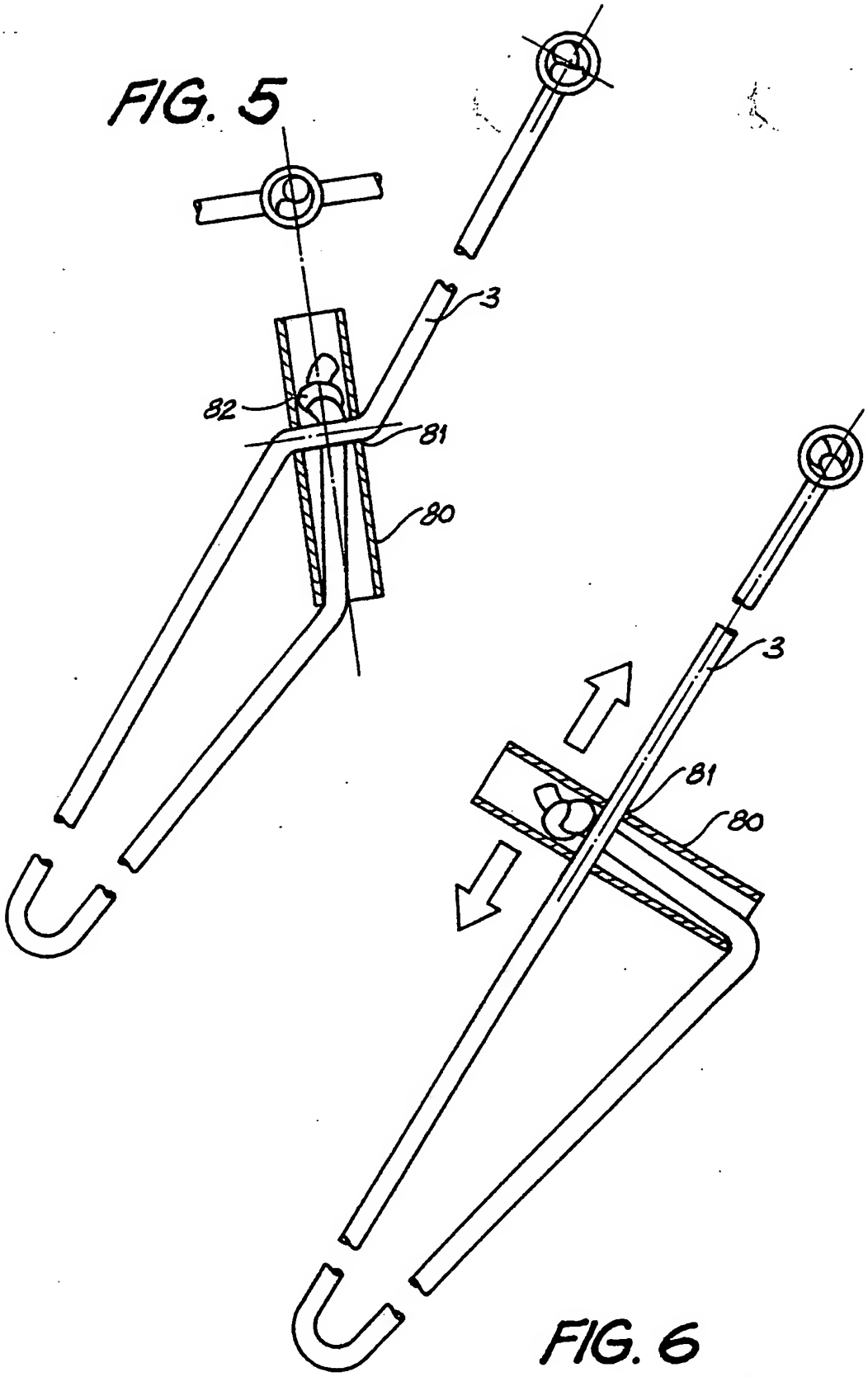


FIG. 6

INTERNATIONAL SEARCH REPORT

International Application No PCT/AU83/00169

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) [3]

According to International Patent Classification (IPC) or to both National Classification and IPC

Int. Cl.[3] A47F 1/00

II. FIELDS SEARCHED

Minimum Documentation Searched [4]

Classification System	Classification Symbols
IPC	A47F 1/00, 1/14
US Cl.	135/95

Documentation Searched other than Minimum Documentation to the Extent that such Documents are included in the Fields Searched [5]

AU: IPC as above

III. DOCUMENTS CONSIDERED TO BE RELEVANT [14]

Category *	Citation of Document, [16] with indication, where appropriate, of the relevant passages [17]	Relevant to Claim No. [18]
A	US, A, 3847170 (ANDERSON) 12 November 1974 (12.11.74)	
A	US, A, 3468321 (THOMPSON) 23 September 1969 (23.09.69)	
A	FR, A, 859919 (BOYER) 2 January 1941 (02.01.41)	
A	FR, A, 993765 (FONTALIRAND) 7 November 1951 (07.11.51)	
A	DE, C, 530425 (THORNBLAD) 29 July 1931 (29.07.31)	

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IV. CERTIFICATION

Date of the Actual Completion of the International Search [2]	Date of Mailing of this International Search Report [2]
25 January 1984 (25.01.84)	(26-01-84) 26 JANUARY 1984
International Searching Authority [1]	**Signature of Authorized Officer [20]**
AUSTRALIAN PATENT OFFICE	R.M. Dorning